

Claims

- [1] A two-sided surface grinding apparatus comprising a pair of grinding whetstones rotatably supported with their grinding surfaces opposed to each other, a work rotation support means for supporting thin sheet-like work for rotation around a rotation axis parallel with the rotary shafts of said grinding whetstones in such a manner that at least parts of the grinding subject surfaces on the opposite surfaces are disposed in a grinding position between said grinding surfaces, and a pair of noncontact support means which are disposed so as to hold substantially the entire surface of a region outwardly of said grinding position in the grinding subject surfaces of said work and which noncontactly support said work by fluid pressure, the grinding subject surfaces on the opposite surfaces of said work being ground by rotating both said work and said grinding whetstones with said work supported by said noncontact support means, said two-sided surface grinding apparatus being characterized in that said noncontact support means are formed with substantially arcuate notches corresponding to said grinding whetstones at least over the central position of said work from their substantially circular outer edges, while the noncontact support surfaces opposed to said work are provided with a plurality of pockets recessed therein and provided with a single or a plurality of fluid supply holes in the inner wall thereof for discharging said fluid and are also provided with a netlike mesh section forming banks around the peripheries of these pockets, said mesh section being composed of peripheral edges disposed along the outer peripheries of the noncontact support surfaces, and inside veins disposed so as to divide the region of the inside of the peripheral edges into a plurality of sections and connected to the peripheral edges in a plurality of inside-and-outside

connecting sections, the portion of said peripheral edge which extends along said notches not being provided with said inside-and-outside connecting sections at least in the region excluding the vicinity of the central position of the work.

- [2] A two-sided surface grinding apparatus as set forth in Claim 1, characterized in that said peripheral edge is such that an inner peripheral edge provided along said notch and an outer peripheral edge other than the same are connected together at opposite ends of said notch and in that said fluid supply holes in said pockets provided along said notch are disposed in the vicinity of said inside-and-outside connecting sections and in the vicinity of the connecting section between the inner and outer peripheral edges.

- [3] A two-sided surface grinding apparatus as set forth in Claim 1 or 2, characterized in that said pockets provided along said notch are so formed as to be substantially equal in radial width along the peripheral direction of the grinding whetstones.

- [4] A two-sided surface grinding apparatus as set forth in any of Claims 1 - 3, characterized in that other pockets than those provided along said notch are divided by the portions of said inside veins which are disposed radially of said work.